

REMARKS

Claims 1, 3-6, 8-11, and 13 are pending. By this Amendment, Claims 1 and 13 have been amended. No new matter is presented.

Entry of Response Proper

Entry of this Amendment is proper under 37 C.F.R. §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issues requiring further search and/or consideration on the part of the Examiner as the amendments to independent Claims 1 and 13 merely clarify the claimed structural features of the invention; (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The Amendment is necessary and was not earlier presented because it is made in response to objections raised in the Final Rejection. Entry of the Amendment is thus respectfully requested.

Claim Rejections Under 35 U.S.C. §102/§103

Claims 1 and 3-4 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Number 6,155,200 to Yasuhiro Horiike et al. (Horiike); Claims 5-6 and 8-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Horiike; Claim 11 is rejected under 35 U.S.C. §103(a) as being unpatentable over Horiike in view of U.S. Patent Number 5,884,009 to Wataru Okase (Okase); and Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Horiike in view of U.S. Patent Number 6,817,377 to Paul Reimer et al. (Reimer).

Applicants respectfully traverse the rejections for at least the following reason(s).

Horiike discloses an ECR plasma generating apparatus that includes a support table for holding an object (e.g., wafer W) to be processed; a gas introducing means for introducing a process gas into the processing chamber; a radio frequency power supply means for applying a radio frequency ranging from 3 - 300 MHz to an electrode inside the processing chamber; and a magnetic field forming means which forms a magnetic field, an integer number of times, as large as a resonant magnetic field corresponding to the applied radio frequency, vertical to the substrate and parallel to the direction of the electric field.

The gas introducing means has an electrically insulating shower head which projects into the processing chamber. The shower head is arranged such that the process gas is discharged from gas discharge holes formed in a lower surface of the shower head and into the processing chamber.

Applicants respectfully point out that the electrode disposed within an inner space of the shower head is arranged horizontally. That is, Applicants respectfully point out that Horiike expressly teaches that "an electrode 16 is provided horizontally in the inner space of the shower head 18..." (see column 6, lines 47 - 49 of Horiike). Put another way, Horiike is totally silent as to whether the electrode is circular, as seen in plan view, or rectangular, or in a bar-shape, or in a cylindrical shape, or is configured to have any other specific geometrical shape.

In fact, Applicants respectfully submit the shape of the electrode is determined or selected depending on the operational needs of the apparatus. For example, in JP-A-1994-45093, Applicants note the reference teaches an ECR plasma processing

apparatus which includes a rectangular electrode. See Claim 1, line 7 of JP-A-1994-45093, which recites the limitation of "the electrode 9 is a *rectangular* electrode having a rectangular surface" due to the nature of the plasma processing taking place inside the processing chamber.

Accordingly, since Horiike fails to provide any express disclosure, teaching, or suggestion as to the geometric shape of the electrode within the shower head, Applicants respectfully submit there is no evidence of Horiike expressly teaching "a gas mixture supply port in fluid communication between the gas-mixing chamber and the shower head is located on a radially extending line of the shower head" as is recited by independent Claims 1 and 13 of the instant application.

Moreover, Applicants submit that if the electrode is of a bar shape, or of a rectangular shape, Horiike cannot possibly teach "a gas mixture supply port in fluid communication between the gas-mixing chamber and the shower head is located on a radially extending line of the shower head" as is recited by independent Claims 1 and 13 of the instant application.

Additionally, Applicants respectfully submit that Horiike fails to disclose, teach or suggest "the gas mixture supply port is ***so constructed and arranged that*** the gas mixture to be supplied from the gas-mixing chamber flows in direct contact with, and ***only from outside a circumferential outer perimeter of***, the upper surface of the shower head ***and the gas-injection holes*** toward a central portion along the upper surface of the shower head" as is recited by independent Claims 1 and 13 of the instant application.

The Office Action, on page 4, lines 2 - 9, states that "claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim...."

Applicants have amended independent Claims 1 and 13 to recite "the gas mixture supply port is *so constructed and arranged that*" in order to clarify that the claim language is intended to be a structural limitation as the Applicants desire to imply that certain forms of structure set forth give a desired result, other forms will not, and that the claim is intended to cover only such forms as will give the desired result, wherein the italicized language is used as is well established in U.S. Patent Practice (see pages 27-76, 27-77 and 33-24 in the *Patent Claims* chapter of Lipscomb (formerly Deller's), Thompson/West 2007).

Further, Applicants respectfully submit that Horiike does disclose or teach how the process gas is supplied to the shower head, and how each of the gas outlet holes ejects the gas.

Therefore, in view of the above, Applicants respectfully submit that Horiike does not disclose, teach or suggest the essential recited features of the present invention, let alone each and every one of the features recited by Claims 1 and 13.

According to U.S. patent practice, a reference must teach every element of a claim in order to properly anticipate the claim under 35 U.S.C. §102. In addition, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628,631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "Every element of the claimed invention must be arranged as in the claim

[t]he identical invention must be shown in as complete detail as is contained in the patent claim.” Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir. 1989) (emphasis added). The Applicants respectfully submit that Horiike does not disclose or suggest each and every feature of the invention recited by Claims 1 and 13. Accordingly, Horiike does not anticipate Claims 1 and 13, nor are Claims 1 and 13, obvious in view of Horiike.

Applicants respectfully submit that modifying Horiike to include the Okase gas-ring and/or Reimer’s load-lock and conveyer chambers would not cure or otherwise address the above-described deficiencies of Horiike.

As such, the Applicant submits that Claims 1 and 13 are allowable over Horiike, Okase and Reimer.

Claims 3-6 and 8-11 depend from Claim 1. It is respectfully submitted that these dependent claims be deemed allowable for at least the same reasons Claim 1 is allowable, as well as for the additional subject matter recited therein.

Withdrawal of the rejections is respectfully requested.


Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of Claims 1, 3-6, 8-11 and 13, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 026390.00009.**

Respectfully submitted,
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